

Quantitative methods and aspects in the study of the interstitial fauna of running waters (Abstract)

Gernot Bretschko und Wolf E. Klemens

The vertical distribution of the river fauna in gravelly sediments is shortly discussed. The neutral term "bedsediments" is proposed for this biotope. A description is given for conditions required for proper quantitative sampling. From field experiments it is evident that the bedsediment fauna promptly reacts on perturbations by trying to reach the surface drift. Therefore, the bedsediment biocenosis has to be positioned in situ before sampling. This is done by applying electric fields (650 V, 50Hz). The freeze core method in combination with previous in situ electro-positioning is described. A method for checking the definition of the sediment surface is proposed. For monitoring the bedsediment fauna the "standpipe trap" is described. Possible sources of errors are analyzed. The first results show a high temporal dynamics of the bedsediment fauna in all sediment layers. There is also evidence that the behaviour of the fauna differs at different layers of sediments. It is proposed to use the temporal variance as a further parameter in describing relative horizontal distribution patterns.

Published in: STYGOLOGIA 2 (1986): 297 - 316.

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The determination of organic matter in river sediments (Abstract)

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The importance of organic matter in ecosystems is characterized and the traditional methods for determining organic matter - wet oxidation and loss of weight on ignition - are shortly discussed. It is shown that both methods are inadequate for general use. Organic carbon is proposed for quantifying organic matter. The precision of organic carbon determinations with LECO LOW CARBON ANALYZER is described. The characterization of the nutritive quality of organic matter by means of nitrogen and phosphorus concentrations is discussed. A method for determining phosphorus and nitrogen in one sample as well as an approximation to differentiate between organic and inorganic bound nitrogen and phosphorus are described.

Published in: ARCH. HYDROBIOL. SUPPL. 68 (1987): 403 - 417.

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Zeitschrift/Journal: [Jahresbericht der Biologischen Station Lunz](#)

Jahr/Year: 1987

Band/Volume: [1987_010](#)

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Artikel/Article: [Quantitative methods and aspects in the study of the interstitial fauna of running waters \(abstract\). Original publiziert in: Stygologia 1986, 2: 297-316. 111](#)